JOURNAL OF Colloid and Interface Science

EDITOR Milton Kerker

ASSOCIATE EDITOR Josip P. Kratohvil

Clarkson University, Potsdam, New York

ADVISORY BOARD

M. Claesson
Stockholm, Sweden

L. Drake
Ada, Oklahoma

G. de Gennes
Paris, France

F. Evans
Minneapolis, Minnesota

Ise
Kyoto, Japan

N. Israelachvili
Santa Barbara, California

P. Joos
Wilrijk, Belgium

M. Kahlweit
Göttingen, West Germany

N. Kallay
Zagreb, Yugoslavia

L. J. Magid
Knoxville, Tennessee

G. H. Nancollas
Buffalo, New York

M. J. Rosen
Brooklyn, New York

S. Ross
Troy, New York

W. B. Russel
Princeton, New Jersey

E. D. Shchukin
Moscow, USSR

G. A. Somorjai
Berkeley, California

P. Wagner
Vienna, Austria

W. R. Wilcox
Potsdam, New York

Victor K. La Mer, Founding Editor

A. C. Zettlemoyer, Editor Emeritus

Volume 135

1990

ACADEMIC PRESS, INC.

Harcourt Brace Jovanovich, Publishers

San Diego New York Boston

London Sydney Tokyo Toronto

Copyright © 1990 by Academic Press, Inc.
All rights reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1990 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0021-9797/90 $3.00

MADE IN THE UNITED STATES OF AMERICA

Contents of Volume 135

NUMBER 1, MARCH 1, 1990

H. D. GESSER, L. KRUCZYNSKI, AND Y. S. YONG. The Surface Properties of Porous Titania Glass 1

N. Z. MISAK, I. M. EL-NAGGAR, H. B. MAGHRAWY, AND N. SH. PETRO. On the Behavior of Hydrous Ceria as an Ion Exchanger: Anion Selectivity 6

IGOR N. IVCHENKO. Generalization of the Lees Method in Boundary Problems of Transfer 16

J. C. HEUGHEBAERT, S. J. ZAWACKI, AND G. H. NANCOLLAS. The Growth of Nonstoichiometric Apatite from Aqueous Solution at 37°C. I. Methodology and Growth at pH 7.4 20

S. J. ZAWACKI, J. C. HEUGHEBAERT, AND G. H. NANCOLLAS. The Growth of Nonstoichiometric Apatite from Aqueous Solution at 37°C. II. Effects of pH upon the Precipitated Phase 33

J. A. DEFAZIO AND D. C. DYSON. Stability of Rectilinear Contact Lines. I. Single Contact Line Theory 45

J. A. DEFAZIO AND D. C. DYSON. Stability of Rectilinear Contact Lines. II. Single Contact Line Examples 58

J. A. DEFAZIO AND D. C. DYSON. Stability of Rectilinear Contact Lines. III. Multiple Contact Lines 79

C. JOLIVALT, M. MINIER, AND H. RENON. Extraction of α-Chymotrypsin Using Reversed Micelles 85

MARIAN KAROLCZAK. Universal Functional Group Activity Coefficient Model in Electrosorption. Part I. Theory 97

BERNARD SIFFERT, JERZY KUCZINSKI, AND EUGENE PAPIRER. Relationship between Electrical Charge and Flocculation of Heavy Oil Distillation Residues in Organic Medium 107

L. G. J. FOKKINK, A. DE KEIZER, AND J. LYKLEMA. Temperature Dependence of Cadmium Adsorption on Oxides. I. Experimental Observations and Model Analysis 118

M. D. FOSTER AND K. F. JENSEN. Interpreting Scattering From Random Porous Solids: A Model of Fully Penetrable Spherical Voids 132

PATRYCJA DYNAROWICZ, MARIA PALUCH, AND DOROTA SZLACHCIC. A Study on the Interactions between Chloral Hydrate and Ethyl Alcohol at the Water/Air Interface 147

J. CALLEJAS FERNÁNDEZ, F. J. DE LAS NIEVES, J. SALCEDO SALCEDO, AND R. HIDALGO-ALVAREZ. The Microelectrophoretic Mobility and Colloid Stability of Calcium Oxalate Monohydrate Dispersions in Aqueous Media 154

JOSE G. DOSRAMOS AND CESAR A. SILEBI. The Determination of Particle Size Distribution of Submicrometer Particles by Capillary Hydrodynamic Fractionation (CHDF) 165

JIN SHENG SHEU AND JER RU MAA. The Inception of Condensation of Water Vapor on Smooth Solid Substrates 178

YONG P. KIM AND JOHN H. SEINFELD. Simulation of Multicomponent Aerosol Condensation by the Moving Sectional Method 185

ERIKA FEKETE, BÉLA PUKÁNSZKY, ANDRÁS TÓTH, AND IMRE BERTÓTI. Surface Modification and Characterization of Particulate Mineral Fillers 200

MIGUEL G. NEUMANN AND MARCELO H. GEHLEN. The Interaction of Cationic Dyes with Anionic Surfactants in the Premicellar Region 209

HANS VINK. Ionic Charge Effects on the Transport Processes in Polyelectrolyte Solutions 218

DOUGLAS M. SMITH, GREGORY P. JOHNSTON, AND ALAN J. HURD. Structural Studies of Vapor-Phase Aggregates via Mercury Porosimetry 227

JOAO B. S. BONILHA, ROSE MARY ZUMSTEIN GEORGETTO, ELSA ABUIN, EDUARDO LISSI, AND FRANK QUINA. Exchange between Alkylammonium and Sodium Ions at the Surface of Dodecylsulfate Micelles 238

HENG-KWONG TSAO AND JYH-PING HSU. Diffusion-Controlled Autocatalytic Reaction: A Possible Driving Force for Microbial Flocculation 246

GUOJUN SHI AND JOHN H. SEINFELD. Homogeneous Nucleation in the Presence of an Aerosol 252

TSUNEO OKUBO. Highly Elastic "Crystals" of Deionized Colloidal Spheres 259

JOHN TEXTER, F. RICHARD HORCH, SYED QUTUBUDDIN, AND ETHIRAJULU DAYALAN. Voltammetric Detection of Micelle Formation 263

DEBORAH H. WIEGAND AND PETR VANÝSEK. Distribution of Oxacyanine Dyes between Water and Nitrobenzene: Determination of the Partition Constants, Association, and Potentials of Transfer of the Dye Cations on Liquid/Liquid Interfaces 272

LARS INGE BERGE. Particle Transit Time Distributions in Single Pores by the Resistive Pulse Technique 283

NOTES

TSUNEO OKUBO. Refractometric Studies of "Liquid-like" and "Crystal-like" Colloids in Deionized Solution 294

WARREN H. WHITE. Particle Size Distributions That Cannot Be Distinguished by Their Integral Moments 297

TSUNEO OKUBO AND TETSUO SHIMIZU. Rotational Brownian Movement of Poly(tetrafluoroethylene) Colloids as Studied by the Conductance Stopped-Flow Technique 300

NUMBER 2, MARCH 15, 1990

VLADISLAV S. MARKIN AND ALEXANDER G. VOLKOV. Specific Volume and Entropy of the Formation of the Interface between Two Immiscible Liquids 305

GEORGE STALIDIS, ANTONIS AVRANAS, AND DIMITRIOS JANNAKOUDAKIS. Interfacial Properties and Stability of Oil-in-Water Emulsions Stabilized with Binary Mixtures of Surfactants 313

STEVEN J. BACHOFER AND ROBIN M. TURBITT. The Orientational Binding of Substituted Benzoate Anions at the Cetyltrimethyl Ammonium Bromide Interface 325

IAN S. GRAHAM, JOEL A. COHEN, AND MARTIN J. ZUCKERMANN. Ion Binding to Charged Lipid Monolayers: The Role of Double Layer and Ion Binding Models 335

M. H. REICH, S. P. RUSSO, I. K. SNOOK, AND H. K. WAGENFELD. The Application of SAXS to Determine the Fractal Properties of Porous Carbon-Based Materials 353

DWARIKA NATH MISRA. Adsorption of Zinc 3,3-Dimethylacrylate and 3,3-Dimethylacrylic Acid on Hydroxyapatite from Solution: Reversibility and Variability of Isotherms 363

YASUHISA ADACHI AND SETSUO OOI. Geometrical Structure of a Floc 374

LISA A. FANTI AND EDUARDO D. GLANDT. Partitioning of Spherical Particles into Fibrous Matrices. 1. Density-Functional Theory 385

LISA A. FANTI AND EDUARDO D. GLANDT. Partitioning of Spherical Particles into Fibrous Matrices. 2. Monte Carlo Simulation 396

M. JARONIEC, X. LU, R. MADEY, A. DABROWSKI, AND J. CHOMA. A Comparative Method for Studying Adsorption from Binary Nonelectrolytic Liquid Mixtures on Microporous Solids 405

M. M. NEDERLOF, W. H. VAN RIEMSDIJK, AND L. K. KOOPAL. Determination of Adsorption Affinity Distributions: A General Framework for Methods Related to Local Isotherm Approximations 410

ANTONIOS TONTISAKIS, ROLF HILFIKER, AND BENJAMIN CHU. Effect of Xylene on Micellar Solutions of *Block*-Copoly(Oxyethylene/Oxypropylene/Oxyethylene) in Water 427

HIROSHI FUKUMURA AND KAZUKO HAYASHI. Time-Resolved Fluorescence Anisotropy of Labeled Plasma Proteins Adsorbed on Polymer Surfaces 435

HIROYUKI OHSHIMA AND TAMOTSU KONDO. Electrokinetic Flow between Two Parallel Plates with Surface Charge Layers: Electro-osmosis and Streaming Potential 443

MASATO NAKAMAE, MASAHIKO ABE, AND KEIZO OGINO. The Effects of Alkyl Chain Lengths of Sodium Alkyl Sulfates and *n*-Alkanes on Microemulsion Formation 449

SHINJI SAKUMA, HIROYUKI OHSHIMA, AND TAMOTSU KONDO. Binding Constants of Metal Cations to and Hamaker Constant for Poly(*N*,*N*-L-lysinediylterephthaloyl) Microcapsules 455

J. A. SCHWARZ AND M. S. HEISE. Preparation of Metal Distributions within Catalyst Supports. IV. Multicomponent Effects 461

FRANÇOISE EHRBURGER-DOLLE, SHINJI MISONO, AND JACQUES LAHAYE. Characterization of the Aggregate Void Structure of Carbon Blacks by Thermoporometry 468

FOLKERT PETRUS CUPERUS, DERK BARGEMAN, AND KEES SMOLDERS. A New Method to Determine the Skin Thickness of Asymmetric UF-Membranes Using Colloidal Gold Particles 486

JYH-HERNG CHEN AND ELI RUCKENSTEIN. Solvent-Stimulated Surface Rearrangement of Polyurethanes 496

STEPHANIE M. GARLICK, H. DUPONT DURST, RAYMOND A. MACKAY, KEITH G. HADDAWAY, AND FREDERICK R. LONGO. Catalytic Hydrolysis of Phosphate Esters in Microemulsions. VII. 1-Alkyl-2-pyrrolidinones as Cosurfactants 508

MARJORIE J. VOLD. Micellization: Some Properties of Dimers of Sodium *n*-Octyl and *n*-Dodecyl Sulfates 520

SUHAS BHANDARKAR AND ARIJIT BOSE. Synthesis of Submicrometer Crystals of Aluminum Oxide by Aqueous Intravesicular Precipitation 531

PAUL M. LINDEMUTH, JOSEPH R. DUKE, FRANK D. BLUM, AND RAYMOND L. VENABLE. Dynamic Behavior in Isotropic Regions of Tetradecylpyridinium Bromide/Pentanol/Heptane/Water System 539

WILLIAM E. MOMSEN, JANICE M. SMABY, AND HOWARD L. BROCKMAN. The Suitability of Nichrome for Measurement of Gas–Liquid Interfacial Tension by the Wilhelmy Method 547

VLADISLAV S. MARKIN AND ALEXANDER G. VOLKOV. The Hansen Method for the Description of Adsorption at a Curved Interface between Immiscible Liquids: An Extension of the Gibbs Method 553

YIH-O TU AND RONALD L. DRAKE. Heat and Mass Transfer during Evaporation in Coating Formation 562

ROLF HILFIKER, DAN Q. WU, AND BENJAMIN CHU. Synchrotron SAXS Measurements on Solutions of Poly(styrene-isoprene) AB Block Copolymer in Aniline 573

NOTES

SHOGO UEMATSU, FUMIKO KIMURA, YUKIHIRO SONODA, YUKIO AKAHORI, AND MASAYUKI NAKAGAKI. The Temperature Dependence of Mixed Monolayers of Poly-γ-Methyl-L-Glutamate and Palmitic Acid at the Air/Water Interface 580

ERIK HÖGFELDT AND JACOB A. MARINSKY. On the Hydrogen–Sodium Ion Exchange on Peat 583

MALCOLM E. SCHRADER AND GEORGE H. WEISS. Free Energy and Vapor Pressure of Sessile Drops. 2. Hysteresis 586

MAREK KOSMULSKI. Effect of *n*-Alcohols on the Surface Charge Density and Adsorption of Supporting Electrolyte on Aluminas 590

M. K. BALOCH AND T. G. M. VAN DE VEN. Light Scattering from Semi-dilute Dispersions of Nonspherical Latex Particles Subjected to an Electric Field 594

LETTER TO THE EDITOR

MASAHIKO ABE, HIROSHI OHKI, KATSUSHI KUWABARA, WATARU AGUI, AND KEIZO OGINO. Spontaneous Breaking of Microemulsion by Surface-Modified Ion Exchange Resins .. 598

AUTHOR INDEX FOR VOLUME 135 601

NOTICE

The Subject Index for Volume 135 will appear in the December 1990 issue as part of a cumulative index for the year 1990.